

Non-farm Activities and Poverty among Rural Farm Households in Yewa Division of Ogun State

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ABSTRACT This study seeks to empirically identify the impact of non-farm income through non-farm activities in alleviating poverty among rural farm households in Yewa part of Ogun state, Nigeria. The study drew a sample of 100 farm households through a multi-stage sampling technique and the data obtained were analyzed using the simple descriptive statistical measures, the poverty depth analysis and logit regression analysis. Results indicate that age, literacy level and family size affected the level and extent of poverty among rural farm households. The poverty incidence is high (72%) and its severity is more among aged and low educational household heads. Non-farm employment added 28% to the total rural farm households' income share. Income from non-farm wage and self employments are 10.57% and 11.34%, respectively of total rural farm household income. Participation in non-farm activities is significantly determined by household size, age, education and gender. Implications are drawn for rural education, birth control and industrialization with development policies to alleviate poverty and promote rural nonfarm income without shifting attention from agriculture.

1. INTRODUCTION

Poverty has been persistent in Nigeria (Ajakaiye and Adeyeye 2001). A chronological review of poverty situation in Nigeria shows that it has been a long standing issue. In 1973, when the nation witnessed the first positive oil shock, there was a dramatic positive impact on most indicators; real per capital income and per capital private consumption rose sharply between 1973 and 1974 and there was a dramatic increase in real wages, particularly in the non-agricultural sector and poverty declined during this period (World Bank 1996). The period between 1975 and 1980 was characterized by mixed picture and mild progress in welfare and poverty improvement. Real wages in agriculture continued to rise until 1976, after which they remained relatively constant until 1980, while there was however a sharp fall in real wages in the non-agricultural sector but the proportion of people in poverty did not decline over this period (World Bank 1996).

FOS (1999) reported that the movement in rural and urban poverty levels follows certain trend in national poverty, rural poverty stood at 29.3 percent in 1980 and rose to 51.4 percent in 1985, fell to 46 percent in 1992 but increased sharply to

69.8 percent in 1996. It was estimated that rural poverty accounts for nearly 63 percent of poverty worldwide, reaching between 65 and 90 percent in some countries in sub Saharan Africa (Khan 2001; Anyanwu 2005). On the other hand, urban poverty was at 17.2 percent in 1980, rose to 37.8 percent in 1983 and remained relatively stable up to 1992, from where it rose to 58.7 percent in 1996 and since 1990 Nigeria has been classified as a "poor" nation (Ajakaiye and Adeyeye 2001). Under the UNDP Human Development Index (HDI) 2001, Nigeria ranked as the 142nd with HDI of 0.400 among the 184 countries listed in 1997, by 1998, the country dropped to 146th position and fell among the 40 poorest countries. The conviction therefore is that poverty has been on the increase commensurate with the extent of the deterioration in the economy (Awoseyila 1999). The search for appropriate strategies for reducing poverty levels among the citizens is one major problem confronting the Nigerian government of today, either at the federal, state or at the local government level. Therefore, the country Nigeria designs sustainable poverty alleviation strategies that can enable the country achieve the goal of poverty eradication.

Olowowoni (1997) reported that Nigeria's approaches to poverty alleviation show that many programmes and projects were focused on the rural areas and this is because agriculture and rural development constitute an important factor

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in alleviating poverty in any economy where poverty is a rural phenomenon, like in Nigeria. These strategies for poverty alleviation were based on the nature of poverty identified, the main structures and policies that generate and nurture it, thus, making Nigeria government to increase share of government expenditure in aggregate gross investment (Awoseyila 1999; Ajakaiye and Adeyeye 2001). Odejide (1997), Okoji (1997), Okojie (1997), in their various reports suggested that other strategies of poverty alleviation among rural farming communities include provision of basic inputs, cottage industries, support communities to establish agro-based industries, strengthen community based organizations and project selection, that is, integration of the poor's views into developmental efforts in order to address the actual needs of the poor and thus make development planning and management sensitive to their needs while Ellis (2000), Barrett (2001) stated that livelihood concept and diversification of income among rural households help in alleviating poverty.

The livelihood portfolio is the bundle of activities households engage in to generate livelihood and achieve a certain level of livelihood security (Rudie 1995), while diversification of income sources has been put forward as one of the strategies households employ to minimize household income variability and to ensure a minimum level of income (Alderman and Paxson 1992). These include non-agricultural wage earnings among rural households referred to as rural non-farm sector (as an additional source of income and employment to farming).

Buchenrieder (2003), Knerr and Winnicki (2003) reported that non-farm rural employment can reduce poverty by generating alternative income sources and it can stimulate agricultural growth and diminish rural-to-urban migration and the findings of de Janvry et al. (2005), Serova and Zvyagintsev (2006), Zvyagintsev et al. (2008) supported this statement. Non-farm economic activities in rural areas are concentrated mainly in mining, food processing and baking, woodwork like carving and carpentry, metal work such as goldsmith, blacksmithing, welding and fittings, the service sector such as tailoring, barbering, hair plaiting, plumbing, painting and other fittings repair services for radio, vehicles and watches and cottage industries like pottery art works, textile and weaving including spinning, mat-making, raffia work. However, as the rural non-

farm sector (RNFS) activities increase, the factors which influence labour markets will play more important role in determining the welfare of the rural poor (Awudu Abdulai 2001; Bogdanovskii 2008).

Reardon et al. (2001) reported that the contribution of non-farm income sources to the rural economy has grown substantially during the last two decades and different country case studies illustrate that the share of non-farm income to total household income ranges between about 30% and 40% while Islam (1997) reports that the share of the non-farm sector in rural employment in developing countries varies from 20% to 50%. Reardon (1997) finds rural non-farm income shares in Africa ranging from 22% to 93%. Therefore, it will be interesting to ask the following questions about Nigeria's rural setting, more particularly rural farming communities' households in Ogun state; would non-farm generate higher income to augment rural farming households' income in sustaining the rural households? Can non-farm income potentially lower the rural household consumption risk? What impact does non-farm income play in the welfare of rural households? Based on the above, this paper aims at assessing the extent and level of poverty among rural farming households, determining the nature of non-farm activities, effect of some socio-economic correlates on farming households' decision to participate in non-farm activities.

2. METHODOLOGY OF THE STUDY

2.1 The Study Area

The empirical setting for the study is Nigeria, with a special focus on rural farm households in Yewa Division of the south-west region of the country. Yewa Division is in Ogun State and has five local government areas viz. Yewa North, Yewa South, Ipokia, Imeko-Afon and Ado-Odo local Government Areas. Yewa Division of Ogun State was purposively selected because it is predominantly noted for agriculture in the state.

Yoruba is the main ethnic group in the region with Egun and Awori dialects. It lies within latitude 4° – 14°N and longitude 3° – 14°E and exhibits the typical tropical climate of averagely high temperature and high relative humidity. There are two distinct seasons, namely, the rainy season, which lasts from March/April to October/November, and the dry season, which lasts for

the rest of the year, October/November till March/April. The temperature is relatively high during the dry season with the mean around 30°C. The harmattan, brought in by the north-easterly winds from December - February, has ameliorating effects on the dry season high temperatures. Low temperatures are experienced during the rains, especially between July and August when the temperatures could be as low as 24°C. The distribution of rainfall varies from about 1000 mm to about 2000 mm. The type of vegetation is the tropical rain forest. The natural resource endowment of the region includes land, water, mineral, forest and agricultural resources, through which a wide range of agricultural and forest products, are obtained. Important cash crops such as rubber, cocoa, kolanut, citrus fruits, and palm produce are available in the region while crops such as tubers, grains, and sugar cane are the important food crops. The waterside areas produce fish abundantly. All these are resources that have been exploited for the development of the region.

2.2 Sampling Procedure

The study utilizes primary data generated among 100 rural farm households drawn from ten rural farming communities in the five local government areas that made Yewa Division of Ogun State viz. Yewa North, Yewa South, Ipokia, Imeko-Afon and Ado-Odo local Government areas. Yewa Division of Ogun State was purposively selected because it is predominantly noted for agriculture in the state.

Multi-stage sampling was used in selecting the sample size. In the first stage, two (2) political wards were selected from each of the five (5) local government areas; the second stage involved the selection of one (1) rural farming community from each of the two political wards while the third stage involved the choosing of ten (10) rural farming households from each rural farming community. In all, a total of 100 questionnaires were administered to rural farm households.

2.3 Analytical Procedures

The data collected were analyzed using descriptive statistics (frequency distribution, percentages), the Foster-Greer Thorbecke (FGT) in analyzing the extents and level of poverty among rural farming households and logistic regression in measuring the effect of some socio

economic correlates on farming households' decision to participate in non farm activities.

2.3.1 The Foster-Greer Thorbecke (FGT) Measure

Following Greeley (1994), Foday Lamin (1996), Gibson (2001), Mukherjee and Benson (2003), de Janvry et al. (2005), FGT poverty index developed by Foster et al. (1984) was adopted to measure the extent of poverty among rural farming households. The FGT poverty index is given by:

$$P_{\alpha}(y,z) = \frac{1}{n} \sum_{i=1}^q \left(\frac{Z - y_i}{Z} \right)^{\alpha} \dots\dots\dots (1)$$

Where; n = total number of households in population

q = the number of poor households

Z = the poverty line for the household

y_i = household income

α = Poverty aversion parameter and takes on value 0, 1, 2

$$\left(\frac{Z - y_i}{Z} \right)^{\alpha} = \text{Proportion shortfall in income below the poverty line.}$$

α takes on value 0,1,2 to determine the type of poverty index.

When α = 0 in FGT, the expression reduces to

$$P_0 \left(\frac{1}{n} \right) q = \left(\frac{1}{n} \right) \dots\dots\dots (2)$$

This is called the Incidence of poverty, describing the proportion of the population that falls below the poverty line.

When α = 1 in FGT, the expression reduces to

$$P_1 = \frac{1}{n} \sum_{i=1}^q \left(\frac{Z - y_i}{Z} \right) \dots\dots\dots (3)$$

and this is called the Poverty depth

When α = 2 in FGT, the expression becomes

$$P_2 = \frac{1}{n} \sum_{i=1}^q \left(\frac{Z - y_i}{Z} \right)^2 \dots\dots\dots (4)$$

This is called Poverty Severity Index. This index weighs the poverty of the poorest household more heavily than those just slightly below the poverty line. It adds to the poverty depth an element of unequal distribution of the poorest household's income below the poverty line.

2.3.2 Effect of Socio-economic Correlates on Farm Households' Decision to Participate in Non-farm Activities

The effect of some socio-economic correlates on farming households' decision to participate in

non farm activities was analyzed using logistic regression analysis.

The logit model assumes,

$$P(Y_t = 1/x_t) = \frac{\exp(x_t\beta)}{1 + \exp(x_t\beta)} \dots\dots\dots (1)$$

An equivalent form can be stated thus,

$$\frac{\exp(x_t\beta)}{1 + \exp(x_t\beta)} = \frac{1}{1 + \exp(x_t\beta)} \dots\dots\dots (2)$$

This can be expressed as, $q_{it} = bx_{it} + e_{it} \dots\dots (3)$

Where q_{it} = an unobservable latent variable for household participating in non-farm activities.

X_{it} = Vector of explanatory variables

b = Vector of parameter to be estimated

e_{it} = error term

The observed binary (0, 1) for whether household participate in non-farm activities is assumed as in the usual logit model.

$$q_{it} = \begin{cases} 1 & \text{if } q_{it} \geq 0 \\ 0 & \text{otherwise} \end{cases} \text{ i.e. participation} = \begin{cases} 1 \\ 0 \end{cases} \text{ otherwise} = 0$$

The probability that the binary assumes the value 1 is,

$$\text{Prob.}(q_{it} = 1) = \frac{e^{\alpha_i + \beta'x_{it}}}{1 + e^{\alpha_i + \beta'x_{it}}}$$

The X_s are:

X_1 = Education of household head (years)

X_2 = Age of household head (years)

X_3 = Household size (Number)

X_4 = Number of children/adults (dependency ratio)

X_5 = Access to credit (Access =1, 0 otherwise)

X_6 = Dummy for ¹Private transfer (Private transfer = 1, otherwise = 0)

X_7 = Farm Size (ha)

X_8 = Sex (Male =1, 0 otherwise)

The estimated b will reveal the effect of each variable on household participation in nonfarm activities embarked upon by rural households.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Characteristics of the Sampled Rural Farming Household Heads

Table 1 reveals the socio-economic characteristics of the sampled households/ household heads.

The results revealed that 74 per cent of the household heads were between 21 and 40 years of age with mean age of 36 years and this indicates the evidence of early marriage, with less than 20 per cent of them having had post-secondary education while on an average, a household head spent 5 years in school confirming poor literacy level among household heads in the study area.

It further reveals that 64 percent of the household heads were males with few household size numbers of 4 people on average and 11 years as average years of experience in farming. The results also revealed that 68 percent of the household heads had no saving with either formal or informal financial institutions, surprisingly 52 percent of them borrowed money to cultivate their farms. The results revealed that 32 percent of the sampled households had arable crops and tree crops farms while 59 percent practiced mixed farming (rearing of livestock and planting of crops). All the sampled households involved in farming activities (100 percent) but only 37 percent had their income solely from farming activities while 63 percent of the households depend on non-farm incomes in addition to the farm income and this shows the importance of non-farm employment in income diversification among rural farm households (Ruben and van den Berg 2001; de Janvry et al. 2005; Zvyagintsev et al. 2008). These poor farm households try to diversify their income within agricultural sector (agribusiness) and across various economic sectors.

3.2 Poverty Line

The poverty line is that level of welfare which distinguishes poor households from non-poor households (Mukherjee and Benson 2003). There is no clear consensus in the literature about when a household or an individual should be defined as poor. Lipton (1983) and Levy (1991) used expenditure approach but Ruben and van den Berg (2001), Yunez-Nuade and Taylor (2001) used income approach. The poverty line set for the study follows income poverty line measure. The relative poverty line was thus defined based on total income for the households. For the samples, the value of the poverty line is ₦46,828.80 per annum. Consequently, farm household that earned less than half the average income or that earned incomes which falls below 50% of the mean income were considered to be poor (Olubanjo 1998). Out of the one hundred household sampled 24% were non poor.

3.3 Extent and Level of Poverty across Socio-economic Characteristics of Sampled Rural Farm Households

The result of FGT analysis showing the poverty status across socio-economic charac-

Table 1: Socio-economic characteristics of sampled households/ household heads

<i>Characteristics of households/household heads</i>	<i>Number of respondents</i>	<i>Percentage of respondent (%)</i>
<i>(a) Age (Years)</i>		
21-30	32	32
31-40	42	42
41-50	17	17
51-60	7	7
61-70	2	2
Average value of variables 36 years		
<i>(b) Educational Level</i>		
No schooling	8	8
Primary school	20	20
Secondary school	55	55
OND/NCE	10	10
Degree/PG	7	7
Average value of variables 5 years spent in school		
<i>(c) Household Size</i>		
1-4	63	63
5-8	33	33
9-12	3	3
≥ 13	1	1
Average value of variables 4 people		
<i>(d) Experience in Farming (Years)</i>		
1-10	57	57
11-20	32	32
21-30	7	7
Above 30	4	4
Average value of variables 11 years		
<i>(e) Saving Status</i>		
Had no saving	68	68
Had positive saving	32	32
<i>(f) Marital Status</i>		
Single	18	18
Married	56	56
Widow	19	19
Divorced/Separated	7	7
<i>(g) Sex</i>		
Male	64	64
Female	36	36
<i>Nature of Non-farm</i>		
Farming activities only	37	37
Farming and non-farm wage employment	18	18
Farming and self employment	27	27
Farming and non-farm investment activities	6	6
Farming and transfers	12	12
<i>Farm Enterprise</i>		
Arable crop only	9	9
Arable and tree crops	32	32
Arable crops and livestock	14	14
Tree crops and livestock	18	18
Arable, tree crop and livestock	27	27

Source: Field Survey 2005

teristics of the sampled farm households is presented in table 2.

Table 2 revealed that poverty incidence was most noticed among household heads who were female, age over 60 years, low literacy level, hou-

sehold size of 13 and more, over 30 years farming experience and involved solely in farming activities without any form of non-farm activity. As a whole, the incidence of poverty in the study area was 0.7221 implying that 72.21% of the sampled farm households were actually poor. This proportion invariably agreed with the earlier estimation of the proportion of poor farm households (i.e., 76%) in the sample based on the poverty line definition.

The value P_1 (poverty depth) across economic characteristics of the rural farm household heads was 0.3443, implying that the poor farm households require 34.43% of the poverty line to get out of poverty. The value of the poverty gap for the poor farm household in the study area is ₦16,123.16. Rural farm households involving in non-farm wage employment and have arable crops farm with livestock required 32% and 20% respectively to get out of poverty.

The P_2 (poverty severity) across all sampled rural farm households was 0.2534, thus poverty severity among poor rural farm household is 25.34% and this was in agreement with Olubanjo (1998). The severity was more expressed by aged household heads, households with 13 members and more, female headed households, households involve in tree cropping and livestock as well as households depending on private transfer in addition to agricultural income.

The F test of the socio-economic variables for this sampled household revealed that age, household size, educational level and nature of nonfarm activities significantly affect the level and extent of poverty among rural farm households.

3.4 Income Composition of Rural Farm Households

Rural farm households income was basically categorized into two, viz. farm and non-farm income.

Farm income sources 72% of the total income of rural farm households while almost 28% came from non-farm sources. While poor rural farm households try to diversity their income within agricultural sector, highest percentage of such income comes from cropping activities (41.69%), followed by livestock activities (16.64%) while agricultural wages was 13.70% of the total income shares.

The share of non-farm income in total income

Table 2: Socio-economic characteristics of the sampled rural farm household heads

Household characteristics	Poverty level and extent across socio-economic correlates		
	P_0	P_1	P_2
	Incidence of poverty	Poverty depth	Poverty severity
<i>Age (yrs)</i>			
21-30	0.5243	0.2958	0.1841
31-40	0.5972	0.3123	0.1923
41-50	0.6345	0.3205	0.2037
51-60	0.8017	0.4167	0.276
61-70	1	0.4638	0.2961
Total	0.7221	0.3443	0.2534
F	2.614***	1.992**	1.864*
<i>Gender</i>			
Male	0.6347	0.3072	0.1935
Female	0.8462	0.5161	0.3767
Total	0.7221	0.3443	0.2534
F	0.554	1.274	1.684*
<i>Educational Level</i>			
No formal	1	0.6197	0.4387
Primary	0.9848	0.4643	0.2103
Secondary	0.8614	0.3249	0.1946
OND/NCE	0.64	0.248	0.1454
HND/B.SC	0.1467	0.1037	0.0871
Total	0.7221	0.3443	0.2534
F	3.294***	1.668*	0.978
<i>Household Size</i>			
4-Jan	0.1349	0.0979	0.0437
8-May	0.9475	0.5155	0.2883
12-Sep	0.9233	0.5776	0.4861
>13	0.985	0.7005	0.5414
Total	0.7221	0.3443	0.2534
F	10.914***	12.005***	11.864***
<i>Nature of Non-farm</i>			
Farming activities only	0.8416	0.4187	0.2682
Farming and non-farm wage employment	0.5519	0.3241	0.2229
Farming and self employment	0.6705	0.3385	0.2232
Farming and non-farm investment activities	0.7741	0.4131	0.2794
Farming and transfers	0.8144	0.5298	0.3667
Total	0.7221	0.3443	0.2534
F	2.301**	2.5772***	1.968*
<i>Farming Experience</i>			
10-Jan	0.6805	0.3021	0.1861
20-Nov	0.755	0.4126	0.284
21-30	0.6571	0.3132	0.2355
Above	0.9241	0.5418	0.3446
Total	0.7221	0.3443	0.2534
F	0.918	0.586	0.563
<i>Farm Enterprise</i>			
Arable crop only	0.7831	0.3816	0.2244
Arable and Tree crops	0.7657	0.3285	0.2012
Arable crops and livestock	0.6385	0.2032	0.1501

Table 2: Contd.....

Household characteristics	Poverty level and extent across socio-economic correlates		
	P_0	P_1	P_2
	Incidence of poverty	Poverty depth	Poverty severity
Tree crops and livestock	0.9806	0.4409	0.2726
Arable, tree crop and live-stock	0.7901	0.347	0.2287
Total	0.7221	0.3443	0.2534
F	0.948	0.769	0.529
<i>Raising Livestock</i>			
No	0.8411	0.4068	0.2652
Yes	0.639	0.3469	0.2488
Total	0.7221	0.3443	0.2534
F	0.471	0.177	0.323

Source: Computed from Survey data 2005

is 27.97%, notably, non-farm self-employment and wage employment are taking substantially higher share among non-farm income. Summarily, poor rural farm household relies strongly on cropping, livestock, agricultural non-farm self-employment and non-farm wage employment. The result revealed that rural farm households have little access to private transfers (that is, remittances from family members living outside the household). This low non-farm income confirms the high level of poverty among households. This is against the apriori expectation on non-farm contribution and this call for urgent action among rural farm households.

3.5 Effect of Socio-economic Correlates on Rural Farm Households Participation in Non-farm Activities

Logit regression was used to determine the probability of participation of household members in non-farm activities since they are basically farmers.

The model predicts participation in non-farm employment with one percent level of significant (revealed by chi square obtainable from the log) likelihood values. With respect to individual characteristics of household heads, age, gender and education affect participation in the non-farm employment. This participation increases with age but for the elderly this effect declines in importance, probably because while experience increases access, health problems decreases it.

Participation in non-farm employment is positively related to farm size but does not signifi-

Table 3: Average annual total income and shares of income sources per farm and non farm activities in rural farm households

<i>Income sources</i>	<i>Amount (₦)</i>	<i>Share (%) of total income</i>
Total income per Household per year (₦)	47,433.65	100
<i>Income Composition</i>		
<i>(a) Farming Activities</i>		
i Cropping activities	19,772.74	41.69
ii Livestock activities	7,896.11	16.64
iii Agricultural wage	6,498.66	13.7
Total	34,167.51	72.03
<i>(b) Non-farm Activities</i>		
i Non farm wage Employment	5011.95	10.57
ii Self employment	5378.09	11.34
iii Nonfarm investment activities	2020.43	4.26
iv Private transfers	855.67	1.8
Total	13,266.14	27.97

Source: Computed from survey data, 2005

Table 4: Logit estimation for participation in non-farm activities by rural farm households

<i>Household characteristics</i>	<i>Vector parameter</i>
Education of household head	-0.085*** (-0.0109)
Age of household head	0.071*** (-0.023)
Household size	1.151** (-0.412)
Children/Adults dependant	-0.179** (-0.09)
Credits	-0.665 (-0.757)
Private transfer	-0.397 (-0.712)
Farm size (Ha)	0.666 (-1.012)
Sex (male = 1)	1.398** (-0.114)
Constant	-2.846** (-0.789)
Log likelihood	-61.094
Nagelkerke R ²	0.781
Chi-square	164.108***

Source: Data analysis, 2005.

Standard errors in parentheses

*indicate significant at 10%, ** significant at 5%, *** significant at 1%

cantly determine the participation of rural household in non-farm activities. Engagement in non-farm employment is not dependent on formal credit. Education, age, household size, dependency ratio and gender are the most important participation criteria in non-farm employment among rural farm households in the study area.

This is in line with results of Ruben and van den Berg (2001), Awudu Abdulai (2001), de Janvry et al. (2005).

4. CONCLUSION

The study showed that there is low level of literacy among rural farm households' members and the incidence of poverty is very high among them but the severity is felt more among aged household heads and households with high family size.

Rural farm households rely strongly on farm income sources but still, 28 percent of their total income is from non-farm income sources and this can be attributed for their high poverty level. Participation in non-farm employment among rural farm households is significantly determined by household size, age, gender, and level of education.

5. RECOMMENDATION

At the policy level, major attention should be given to education and birth control as poverty alleviation strategies in rural setting. Aids and subsidized inputs should be provided for rural farm households to improve agriculture since they are mainly involved in farming and have the higher percentage of their income from farming activities. Access to higher return non-farm jobs should be encouraged to boost their income but not at the expense of farm productivity because rural farm households are the food basket of the nation, therefore policies that will develop and promote input-intensive agricultural technologies in enhancing agricultural yields and reducing labour demands for production will go a long way.

NOTES

1. Private transfer in this paper means the remittances from family members living outside the household.

REFERENCES

- Ajakaiye A, Adeyeye VA 2001. The nature of poverty in Nigeria. *Institute of Social and Economic Research Monograph Series*, No. 13: 1- 20.
- Alderman H, Paxson CH 1992. Do the poor insure? A synthesis of the literature on risk and consumption in developing countries. *Policy Research Working Paper, WPS 1008*. Washington DC: The World Bank.
- Anyanwu JC 2005. *Rural Poverty in Nigeria: Profile, Determinants and Exit Paths*. Oxford UK: Blackwell Publishing Limited.

- Awoseyila AP 1999. The dimensions of poverty in Nigeria. *CBN Bullion* Oct /Dec 1999, 23(2):31-32.
- Awudu Abdulai 2001. Determinants of income diversification amongst rural households in Southern Mali. *Food Policy*, 26: 437-452.
- Barret 2001. Non-farm income diversification and household livelihood strategies in rural Africa. Concepts, dynamics and policy implications. *Food Policy*, 26:315-331.
- Bogdanovskii V 2008. Rural and agricultural labour markets. In: Z Lerman (Ed.): *Russia's Agricultural in Transition: Factor Markets and Constraints on Growth*, Lanham MD: Lexington Books, pp. 85-90.
- Buchenrieder G 2003. Overview of poverty impacts of and policy option for non-farm rural employment. In: B Knerr, T Winnicki: *Proceeding of the Mini-symposium at the 25th International Conference of Agricultural Economists, Durban, South Africa*, University of Hohenheim Stuttgart, pp.1-23
- De Janvry A, Sadoulet E, Zhu N 2005. The role of non-farm incomes in reducing poverty and inequality in China. *CUDARE working paper 1001*, Berkeley: University of California.
- Ellis F 2000. The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2): 289-302
- Federal Office of Statistics (FOS) 1999. Poverty and agricultural sector in Nigeria. *FOS Report*, Abuja Nigeria: FOS.
- Foday Lamin JM 1996. *Poverty Monitoring in Africa CERAf*. School of Business, Upper Montclair, New Jersey: Montclair State University.
- Foster J, Greer J, Thorbecke E 1984. A class of decomposable poverty measures. *Econometrica*, 52(3): 761-776.
- Gibson J 2001. Measuring chronic poverty without a panel. *Journal of Development Economic*, 65: 243-266.
- Greeley M 1994. Measurement of poverty and poverty of measurement. *Institute of Development Studies (IDS) Bulletin*, 25(2): 50-56.
- International Labour Organization (ILO) 1976. Employment growth and basic needs: A one word problem: *International Labour Organization Report*. Geneva Switzerland: ILO.
- Islam N 1997. The non-farm sector and rural development. *Food, Agriculture and Environment Discussion Paper No. 22*. Washington DC: IFPRI.
- Kahn MN 2001. Rural poverty in developing countries: Implication for public policy. *Economic Issues*, 26:8-15.
- Knerr B, Winnicki T 2003. Keeping alive through non-farm income: Facts and concepts in the region of Warminsko-Mazurski, Poland. In: B Knerr, T Winnicki (Eds.): *Proceeding of the Mini-symposium at the 25th International Conference of Agricultural Economists, Durban, South Africa*, University of Hohenheim Stuttgart, pp. 80-98
- Levy S 1991. Poverty alleviation in Mexico. *World Bank Policy, Research and External Affairs Working Paper Series* 679. Washington DC: The World Bank.
- Lipton M 1983. Poverty, under nutrition and hunger. *World Bank Staff Discussion Paper No 59*. Washington DC: The World Bank.
- Mukherjee S, Benson T 2003. The determinants of poverty in Malawi, 1998. *World Development*, 31(2): 339-358.
- Odejide AF 1997. Breaking the vicious circle of poverty among women in developing countries: The case of micro-credit. In: FO Odoko (Ed.): *Poverty Alleviation in Nigeria. Annual Proceedings of the Nigerian Economic Society*. Ibadan, Nigeria: NAAE, pp. 367-382.
- Okoji MA 1997. Female household heads: The environmental consequences of poverty. In: FO Odoko (Ed.): *Poverty alleviation in Nigeria. Annual Proceedings of the Nigerian Economic Society*. Ibadan, Nigeria: NAAE, pp. 383-396.
- Okojie CEE 1997. Human capital investment and intergeneration dimension. In: FO Odoko (Ed.): *Poverty Alleviation in Nigeria. Annual Proceedings of the Nigerian Economic Society*. Ibadan, Nigeria: NAAE, pp. 429-450.
- Olowowoni GD 1997. Towards a sustainable programme for poverty alleviation in Nigeria. In: FO Odoko (Ed.): *Poverty Alleviation in Nigeria. Annual Proceedings of the Nigerian Economic Society*. Ibadan, Nigeria: NAAE, pp. 475-486.
- Reardon T 1997. Using evidence of household income diversification to inform study of the rural non-farm labor market in Africa. *World Development*, 25(5): 735-748
- Reardon T, Berdeque J, Escobar G 2001. Rural non-farm employment and incomes in Latin America: Overview and policy implications. *World Development*, 29(3): 395-409.
- Rudie I 1995. The significance of eating, cooperation, support and reputation in Kelantan Malay households. *World Development*, 27(2): 415-422.
- Ruben R, van den Berg M 2001. Non-farm employment and poverty alleviation of rural farm households in Honduras. *World Development*, 29(3): 549-560.
- Serova EU, Zvyagintsev D 2006. *Alternative Rural Employment in Russia*. Moscow: Mir-Rossi State University Higher School of Economics.
- Yunez-Naude A, Taylor JE 2001. The determinants of non-farm activities and incomes of rural households in Mexico with emphasis on education. *World Development*, 29(3): 561-572.
- World Bank 1996. Report of Population and Human Resources Division, West African Department, African Region: Nigeria, poverty in the midst of plenty; the challenge of growth with inclusion. *World Bank Poverty Assessment Report*, Washington DC: The World Bank.
- World Bank 1999b. Inequality measurement and decomposition. *World Bank Poverty Net*, Washington DC: The World Bank.
- Zvyagintsev D, Shick O, Serova E, Lerman Z 2008. Diversification of rural incomes and non-farm rural employment: Evidence from Russia. *Discussion Paper No. 3.08*, Jerusalem: Department of Agricultural Economics and Management, Hebrew University.